Post Glover Resistors

Harmonic Filter Resistors

The ever-increasing use of power electronics and other solid state devices, which generate harmonic voltages, make the issue of power quality more and more important both for suppliers and users of electrical power. Complex waveforms created by solid-state devices in power system converters, motor controls, etc. feed harmonics into power systems, causing trouble with equipment connected elsewhere in the system.

The solution is higher order harmonic filters consisting of capacitors, inductors and resistors tuned to eliminate specific frequencies. The capacitors and inductors allow the fundamental frequency through and divert the harmonics into the filter resistor where the harmonic currents are dissipated as heat and thus lost from the system.

Post Glover designs, builds and tests their filter resistors in accordance with applicable IEC and IEEE standards to guarantee their performance. With no two installations ever being the same, our experienced engineers develop the proper solution for your particular application and environment. Our low inductance designs are built using all stainless steel elements in corrosion resistant enclosures chosen

for your unique specification. Post Glover's reputation in filter resistors has been built on over 100 years of field performance and independent test facilities, where we've proven our engineering and manufacturing prowess to be second to none.

Design Considerations with Filter Resistors

Power Dissipation

This power is partially stored in the mass of the resistor elements before being transferred to the surrounding environment through convection cooling. Not only is the overall mass of the current carrying material important, but also :

- the surface area of the resistor elements,
- the temperature difference between ambient air and the heating elements,
- the cumulative effect of the resistors on each other.

Resistance Value

The overall filter design dictates the required resistance. As such, it is imperative the Customer specify the nominal value of the resistor as well the desired tolerance.

Additionally, the inherent inductance of the resistor may affect the performance of the filter. Post Glover engineers their resistor assemblies to not only minimize this inductance, but also limit the change in resistance as the elements heat up to guarantee a stable operating profile.

Voltage/Insulation Class

The resistor must be designed in accordance with local standards (IEEE, IEC, etc.) and consider line to line voltage, arcing distances, creepage distances, BIL withstand level and any expected voltage transients.

Current Rating

The resistive elements, along with the internal and external connections have to be carefully considered and engineered to carry not only the rated current, but also periodic high current transients.

Miscellaneous

Other factors can contribute to the design of the resistor, including physical conditions of the site such as the level of atmospheric pollution, seismic zone, corrosive environment, wind and altitude.

Post Glover™
"The Resistor Specialists"
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Important Design Parameters for Harmonic Filter Resistors

This form is intended solely as a guideline to be certain all pertinent information is provided, and is not a substitute for submitting the complete specification.

Customer name: _____		Phone: _____	
Quote requested by: _____		Fax: _____	
Quote due by: _____		Email: _____	
Voltage, line-to-line: _____ volts		Voltage, line-to-neutral: _____ volts	
Current: _____ amps			
Resistance: _____ ohms		Tolerance: ± %	
Power: _____ kilowatts			
Enclosure:	❑ None	❑ Outdoor Specify IP/NEMA rating:	❑ Single phase per enclosure ❑ Three phase per enclosure
Enclosure finish:	❑ Mill galvanized (standard)	❑ Stainless Steel, 304 ❑ Stainless Steel, 316	❑ Painted galvanneal steel, NASI-61 Gray ❑ Painted galvanneal steel, other Specify color:
Incoming connection:	❑ Top-mounted bushings	❑ Same side-mounted bushings	❑ Alternate side-mounted bushings
Environmental conditions:	❑ 1 Ambient air temperature _____ °C ❑ Seismic zone _____		❑ Elevation _____ masl ❑ Specific creepage required _____ mm/kv
Accessories:	❑ Elevating stand Height:		

Other requirements: _____

_____

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